

## Google's App Engine: Getting Serious about the Enterprise Market

Science fiction buffs know about the "tractor beam". A starship floats without power. A space tug locks on to the crippled star cruiser with a magnetic beam. The space tug reels in the crippled starship the way a fisherman lands a rainbow trout.

Google's enterprise tractor beam is its App Engine. The fish are enterprise customers. Unlike the science fiction tractor beam, the Google beam is quite real and starting to reel in the enterprise catch.

The technical press reported that Google's App Engine now supports Java. What's left out of these stories is that the App Engine makes it easy for an organization to tap the power of Google's infrastructure. The payoff for enterprise customers is that Google offers a way around the punishing costs of traditional enterprise solutions. Instead of forcing an organization to decide between an on premises or a cloud solution for enterprise software. Google's approach allows the customer to move as much or as little information and work to the Google cloud as it wishes. Google's App Engine promises lower cost (at least for now), flexibility, developer friendly methods, and access to the Google technical plumbing. In today's business climate, the Google App Engine can be just what the CFO ordered.

Let's back up.

The Google App Engine is Google's cloud computing initiative. Like Amazon, Google makes available its software and infrastructure to customers who want scaling, computing power on demand, and a way to get out from under the crushing burden of capital investment for on premises solutions.

Google provides a wealth of App Engine information at <http://code.google.com/appengine/>. The information is tailored to a programmer or information technology professional. The marketing lingo is not needed because Google wants to reach the technically inclined, not the senior managers.

Google App engine allows a programmer to build Web applications on the same scalable systems that power Google's applications. App Engine applications provide a comparatively easy, low cost way to build, maintain, and scale. Spikes in traffic or data can cripple a managed services provider or an on premises installation. Google's infrastructure can handle virtually any computing demand thrown at it.

Developers can use either Python or Java. Sample code and beefy documentation help to reduce the learning curve. A developer can use some Web 2.0 programming tools to reduce the App Engine learning curve. (Information is at <http://code.google.com/p/google-app-engine-samples/> or you can query Google.com for "App Engine" and explore the links.)

With App Engine you write your application code, test it on your local machine and upload it to Google with a simple click of a button or script. Once the application is uploaded to Google, Google hosts and automatically scales your application. Google's automated systems handle system administration. When a spike takes place, Google brings up automatically new instances of the application. Data are automatically chopped up, replicated, and stored in multiple locations to ensure Google-velocity response times. Although somewhat technical, Google offers a solid FAQ (list of frequently asked questions) that provide considerable detail about the App Engine. You can read the FAQ at <http://code.google.com/appengine/kb/>.

What can you build with the App Engine? The answer is, "Anything." My team has used the service to build content intake subsystems for a publisher in the mid west and to create customized intelligence functions similar to this public demonstration at <http://www.arnoldit.com/overflight>.

Google's engineers provide a large number of code snippets and samples. The preferred way to use these is to download an example; for example, `gdata_feedfetcher`. (You can find this script at [http://code.google.com/p/google-app-engine-samples/source/browse/trunk/gdata\\_feedfetcher](http://code.google.com/p/google-app-engine-samples/source/browse/trunk/gdata_feedfetcher). Google also provides a cookbook. You can browse code samples and commentary at <http://appengine-cookbook.appspot.com/>. You can either read the code or run it. Then edit the code sample to meet your requirements, upload the application, and you are able to use the Google infrastructure for the application. The approach is straightforward and easy for a developer familiar with Java and Python programming tools. If not, you will have to put on your thinking cap. Google does not provide the memory foam cushions and training wheels that some vendors provide. Google assumes that its customers are Googley, which may or may not work for the company in the long run.

There are some gotchas, of course. Google is a commercial enterprise. You can use the App Engine without charge, although registration is required. Once your application drives traffic and data transfers above a certain level, you will be asked to pay Google for these industrial-strength demands. The pricing is reasonable and competitive with Amazon's cloud services. However, the App Engine is comparatively new and Google makes it clear that it wants to encourage developers to use the capability. Based on the information available to me, Google wants to keep the prices reasonable. Other considerations range from its beta status (could change without warning, pricing may shift without much notice, somewhat limited functionality such as read only services) to partial support of the Java programming language. Perhaps the major consideration is the one-way nature of the Google App Engine. Software built for the App Engine cannot be easily repurposed to run on a competitive system. One Google reseller pointed out, "Google Apps has a Hotel California aspect." An accurate observation.

A more significant consideration is built in limitations to the system. For example, certain operations are not permitted. You have to upload data to Google in chunks of 10 megabytes per file transfer. Another consideration is that Google has been criticized for limitations in its enterprise security support. App Engine includes additional security functions. A useful thread appears on Google Groups ([http://groups.google.com/group/google-appengine/browse\\_thread/thread/36a262be410327a6/2bcc2d92fd1ca7ab?lnk=raot](http://groups.google.com/group/google-appengine/browse_thread/thread/36a262be410327a6/2bcc2d92fd1ca7ab?lnk=raot))

Oracle has few reservations about Google, its enhanced App Engine, or the Secure Data Connector. The company has announced plans to develop solutions for the sprawling Oracle database customer line up. TechTarget, a trade news publication, pointed out that Oracle will use Google to add Google-type features to customer relationship applications. Oracle sees cost, technical, and the odor of a sizzling steak in its Google tie up. The meshing of Oracle and Google technology makes sense. As new workers coin organizations, the request "I want a Google service" is becoming increasingly important.

There are some dissenters, particularly about Google's support for Java, an enterprise programming language. Sun Microsystems's has expressed some concern that Google is not supporting the full range of Java functions. Google, on the other hand, is supporting Java functions that hit the sweet spot for enterprise developers. Google's engineering makes it comfortable for a Java developer to hook into the Google resources. The jury is still out, but Google's clout is considerable. Sun Microsystems' is mired in a financial swamp. Is Google redefining Java to meet its own goals? That's a good question but one that cannot be answered at this time.

How important is the Google App Engine to Google's enterprise ambitions? In my opinion, it is very important for three reasons.

First, it makes explicit that Google's engineers can make the Google services available to an enterprise via network connections. If the market responds, the computing approach will be to use Google for heavy lifting and local computers to process certain data. The payoff will be lower costs and a way around the brutal on site information technology burden that weighs upon many organizations.

Second, the customer remains in control of his or her information. The claim that Google does not support secure data access is no longer accurate. No system is foolproof but Google has made significant security strides. Oracle, for example, is no weak sister in the enterprise and the company is grabbing the App Engine controls and driving forward.

Third, the App Engine enhancement makes clear that Google will complement the Google Search Appliance, Google Maps, and the OneBox API with an enabling layer of middleware. The technical improvements to App Engine leave no doubt that Google wants to get a larger share of the enterprise market's investments in software and systems.

Is the App Engine for you? In my opinion, if not today, soon, very soon. The bait is “free” and looks quite tasty.

Stephen Arnold, April 14, 2009